IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-42 (canceled).

43. (Previously Presented) Apparatus for filtering emboli from blood flowing through a vessel, the apparatus comprising:

a guide wire having a distal region and a stop on the distal region;

a capture ring disposed for translation on the guide wire, the stop limiting translation of the capture ring in a distal direction; and

a filter sac connected to the capture ring.

44. (Previously Presented) The apparatus of claim 43 wherein, when the filter sac is deployed in the vessel, rotation or distal translation of the guide wire relative to the capture ring does not displace the filter sac, but retraction of the guide wire in a proximal direction causes the stop to abut against the capture ring.

45. (Previously Presented) The apparatus of claim 43 further comprising a plurality of self-expanding struts coupled between the filter sac and the capture ring.

46. (Previously Presented) The apparatus of claim 43 further comprising an elastomeric cone affixed to a distal portion of the filter sac.

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47. (Previously Presented) The apparatus of claim 45 further comprising a cylindrical sleeve coupled between the plurality of self-expanding struts and the filter sac.

48. (Previously Presented) Apparatus for filtering emboli from blood flowing through a vessel, the apparatus comprising:

a guide wire having a first portion having a first diameter and a distal region having a second diameter greater than the first diameter; and

a filter element having a capture ring disposed for translation on the first portion, the capture ring having an aperture greater than the first diameter but smaller than the second diameter,

wherein rotation or distal translation of the guide wire relative to the capture ring does not displace the filter element.

49. (Previously Presented) The apparatus of claim 48 wherein the filter element comprises an expandable sac.

50. (Previously Presented) The apparatus of claim 49 wherein the filter element further comprises a plurality of struts coupling the expandable sac to the capture ring.

51. (Previously Presented) The apparatus of claim 50 wherein the struts are self-expanding.

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52. (Previously Presented) The apparatus of claim 49 wherein the filter element further comprises an elastomeric cone affixed to a distal portion of the expandable sac.

53. (Previously Presented) The apparatus of claim 48 wherein the guide wire further comprises a flange disposed on the distal region having a diameter larger than the diameter of the aperture in the capture ring.

54. (Previously Presented) The apparatus of claim 50 wherein the filter element further comprises a cylindrical sleeve coupled between the plurality of struts and the expandable sac.

55. (Previously Presented) The apparatus of claim 49 wherein the filter element further comprises a distal ring coupled to the expandable sac.

56. (Previously Presented) The apparatus of claim 55 wherein the distal ring has a bore with a diameter greater than the second diameter.

57. (Previously Presented) The apparatus of claim 48 wherein the filter region has a contracted state suitable for transluminal delivery, and the distal region has a length that is greater than a length of the filter element in the contracted state.

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58. (Previously Presented) The apparatus of claim 48 wherein the filter region has a contracted state suitable for transluminal delivery, the apparatus further comprising a flexible catheter having a lumen and a push tube disposed in the lumen, the push tube having a guide wire lumen for accepting the guide wire, and wherein the lumen is sized to accept the filter element in the contracted state.

59. (Previously Presented) Apparatus for filtering emboli during treatment of occlusive disease in a vessel, the apparatus comprising:

a guide wire having a first diameter and a distal region having a second diameter greater than the first diameter;

a filter element having a sac coupled to a capture ring, the capture ring having an aperture greater than the first diameter but smaller than the second diameter,

wherein the filter element is disposed on the guide wire and the guide wire extends through the aperture with the distal region disposed distally of the capture ring, so that when the filter element is deployed in the vessel, rotation or distal translation of the guide wire does not displace the filter element, but retraction of the guide wire in a proximal direction causes the distal region to abut against the capture ring.

60. (Previously Presented) The apparatus of claim 59 wherein the filter element further comprises a plurality of self-expanding struts coupled between the sac and the capture ring.

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61. (Previously Presented) The apparatus of claim 60 wherein the filter element further comprises an elastomeric cone affixed to a distal portion of the sac.

62. (Previously Presented) The apparatus of claim 59 wherein the filter element further comprises a cylindrical sleeve coupled between the plurality of self-expanding struts and the capture ring.

63. (Previously Presented) The apparatus of claim 59 wherein the filter element further comprises a distal ring coupled to the sac.

64. (Previously Presented) The apparatus of claim 63 wherein the distal ring has a bore with a diameter greater than the second diameter.

65. (Previously Presented) A method of filtering emboli from blood flowing through a vessel, the method comprising:

providing a guide wire having a distal region including a stop, and a filter element having a capture ring disposed for translation on the guide wire proximal of the stop;

transluminally inserting the guide wire and filter element into a vessel;

deploying the filter element to engage a wall of the vessel, the filter element filtering emboli out of blood flowing through the vessel;

advancing a treatment device along the guide wire to treat a portion of the vessel proximal to the location of the filter element, rotation or distal translation of the guide

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wire relative to the filter element imparted by the treatment device not displacing the filter element.

66. (Previously Presented) The method of claim 65 further comprising a step of, after use of the treatment device is completed, pulling the guide wire proximally so that the stop engages the capture ring and causes the filter element to return to the contracted state.

67. (Previously Presented) The method of claim 65 further comprising:

providing a delivery sheath; and

compressing the filter element to a contracted state to insert the filter element within the delivery sheath.

68. (Previously Presented) The method of claim 65 wherein the filter element comprises an expandable sac, and deploying the filter element comprises expanding the expandable sac so that a perimeter of the expandable sac contacts the wall of the vessel.

69. (Previously Presented) The method of claim 68 wherein the filter element further comprises a cylindrical sleeve and deploying the filter element further comprises expanding the cylindrical sleeve against the wall of the vessel.

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70. (Previously Presented) The method of claim 65 further comprising providing a catheter having a lumen, and pulling the guide wire proximally causes the filter element to become retracted within the lumen.

71. (New) Apparatus for filtering emboli from blood flowing through a vessel, the apparatus comprising:

a guide wire having a distal region and a distal stop disposed on the distal region;

a tubular segment disposed on the distal region of the guide wire proximal to the distal stop, the tubular segment having a circumference and a plurality of longitudinally-extending through-wall slits disposed around the circumference, the longitudinally-extending through-wall slits defining a plurality of self-expanding struts; and

a filter sac disposed on the struts of the tubular segment.

72. (New) The apparatus of claim 71 wherein the guide wire further includes a proximal stop disposed on the guide wire proximal to the tubular segment.

73. (New) The apparatus of claim 71 further comprising a tube interposed between the tubular segment and the guide wire, the filter sac coupled to a distal end of the tube.

74. (New) The apparatus of claim 71 further comprising a retrieval catheter having a distal end and a recovery portion located at the distal end, wherein the

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recovery portion prevents emboli captured by the filter sac from escaping into the blood when the tubular segment is collapsed for removal.

75. (New) The apparatus of claim 74, wherein the recovery portion of the retrieval catheter includes an elastic pod that is configured to deform upon receipt of at least a portion of the tubular segment.

76. (New) The apparatus of claim 71 further comprising a retrieval catheter having a distal end and a recovery sock coupled to the distal end, wherein the recovery sock prevents emboli captured by the filter sac from escaping into the blood when the tubular segment is collapsed for removal.

77. (New) The apparatus of claim 71 wherein each one of the plurality of self-expanding struts includes a portion that lies flush against the vessel when the apparatus is deployed.

78. (New) The apparatus of claim 71 wherein the filter sac is affixed to a surface of the plurality of self-expanding struts.

79. (New) The apparatus of claim 71 wherein the filter sac is at least partially affixed to an exterior surface of the plurality of self-expanding struts.

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80. (New) The apparatus of claim 71 further comprising a flexible coil coupled at a distal end of the tubular segment.

81. (New) The apparatus of claim 80 wherein the coil comprises a plurality of adjacent turns.

82. (New) The apparatus of claim 71 further comprising:

a linear bearing disposed on the guide wire proximal to the distal stop; and

a flexible coil coupled between the linear bearing and a distal end of the tubular segment.

83. (New) The apparatus of claim 82 wherein the coil comprises a plurality of adjacent turns, the plurality of adjacent turns being spaced sufficiently close to one another enough that emboli cannot pass therebetween.

84. (New) Apparatus for filtering emboli from blood flowing through a vessel, the apparatus comprising:

a guide wire having a distal region;

a filter element disposed for rotation on the distal region of the guide wire, the filter element comprising a self-expanding strut and a filter sac connected to the self-expanding strut; and

a distal stop disposed on the distal region distal to the filter element, the distal stop limiting distal translation of the filter element on the guide wire.

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85. (New) The apparatus of claim 84 wherein, when the filter sac is deployed in the vessel, rotation of the guide wire does not displace the filter element.

86. (New) The apparatus of claim 84 further comprising a proximal stop disposed on the guide wire proximal to the filter element.

87. (New) The apparatus of claim 86 wherein the filter element is disposed for sliding translation on the guide wire between the proximal stop and the distal stop.

88. (New) The apparatus of claim 84 wherein the filter element further comprises a flexible tube interposed between the guide wire and the self-expanding strut, a distal end of the filter sac being coupled to the flexible tube.

89. (New) The apparatus of claim 84 wherein the filter element comprises a tubular segment having a circumference and a plurality of longitudinally-extending through-wall slits disposed around the circumference, the longitudinally-extending through-wall slits defining the self-expanding strut.

90. (New) The apparatus of claim 84 further comprising a flexible coil coupled at a distal end of the filter element.

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91. (New) The apparatus of claim 84 further comprising:

a linear bearing disposed on the guide wire proximal to the distal stop; and

a flexible coil coupled between the linear bearing and a distal end of the filter element.

92. (New) A method of filtering emboli from blood flowing through a vessel, the method comprising:

providing a guide wire having a distal region including a distal stop, and a filter element disposed for translation on the guide wire proximal to the distal stop, the filter element comprising a plurality of self-expanding struts having a filter sac affixed thereto;

transluminally inserting the guide wire and filter element into a vessel;

deploying the filter element so that the struts and filter sac expand to engage a wall of the vessel, the filter sac filtering emboli out of blood flowing through the vessel;

advancing a treatment device along the guide wire to treat a portion of the vessel proximal to the location of the filter element, rotation or distal translation of the guide wire relative to the filter element imparted by the treatment device not displacing the filter element.

93. (New) The method of claim 92 further comprising retracting the guide wire in a proximal direction to cause the distal stop to abut against the filter element.

94. (New) The method of claim 92 further comprising:

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providing a retrieval catheter having a recovery portion;

advancing the retrieval catheter over the guide wire until the recovery portion covers a mouth of the filter element; and

urging the retrieval catheter against the self-expanding struts of the filter element to cause the filter element to collapse.

95. (New) The apparatus of claim 94, wherein the recovery portion of the retrieval catheter includes an elastic pod that is configured to deform upon receipt of the filter element.

96. (New) The method of claim 92 further comprising:

providing a retrieval catheter having a recovery sock;

advancing the retrieval catheter over the guide wire until the recovery sock covers a mouth of the filter element; and

urging the retrieval catheter against the self-expanding struts of the filter element to cause the filter element to collapse.

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